



UPPER-LIMB PROSTHETICS EXAMINATION

For Physicians, Surgeons, and Therapists

1. The primary body control motion for operating the terminal device of an above elbow prosthesis is:
 - a. Flexion of the ipsilateral shoulder joint
 - b. Extension of the contralateral shoulder joint
 - c. Flexion of the contralateral shoulder joint
 - d. Extension of the ipsilateral shoulder joint
 - e. Adduction of the ipsilateral scapula

2. A wrist flexion unit should be given serious consideration when prescribing for:
 - a. Above-elbow amputees
 - b. Below-elbow amputees
 - c. Bilateral amputees
 - d. Shoulder disarticulation amputees
 - e. Wrist disarticulation amputees

3. The APRL hook is an example of which type of terminal device?
 - a. Voluntary opening
 - b. Stainless steel
 - c. Automatic locking
 - d. Voluntary closing
 - e. Both b and c
 - f. Both c and d
 - g. Both a and b

4. The Two Cable control system is used in the management of:
 - a. Elbow disarticulation amputees
 - b. Wrist disarticulation amputees
 - c. Below elbow amputees
 - d. Shoulder disarticulation amputees
 - e. Above elbow amputees
 - f. a, d, and e
 - g. b and c

5. In order to lock or unlock the elbow unit of a standard above-elbow prosthesis, the amputee must:
 - a. Extend the ipsilateral shoulder joint
 - b. Rotate the ipsilateral scapula upward
 - c. Rotate the ipsilateral scapula downward
 - d. Abduct the ipsilateral shoulder joint
 - e. Elevate the ipsilateral scapula
 - f. a, c, and d

6. Step up hinges should be given most serious consideration when prescribing for:
 - a. Bilateral above-elbow amputees
 - b. Wrist disarticulation amputees
 - c. Bilateral below-elbow amputees
 - d. Shoulder disarticulation amputees
 - e. Elbow disarticulation amputees

7. The standard positive locking elbow joint used in most above-elbow prostheses permits the amputee to position the elbow in how many different attitudes of flexion?
 - a. 5
 - b. 11
 - c. 15
 - d. 7
 - e. 9

8. The lateral support strap is a component of the type of harness used in the management of the:
 - a. Wrist disarticulation amputee
 - b. Bilateral below-elbow amputee
 - c. Above elbow amputees
 - d. Partial hand amputees

9. When step up hinges are prescribed, the prosthesis must be fabricated with:
 - a. An open ended socket
 - b. A two cable control system
 - c. A split socket
 - d. A turntable
 - e. An elbow flexion attachment
 - f. A spring lift assist
 - g. All of the above
 - h. None of the above

10. When prescribing for the very short unilateral below-elbow amputee, serious consideration should be given to the use of:
 - a. Step up hinges
 - b. A pre-flexed socket
 - c. Flexible hinges
 - d. Polycentric hinges
 - e. A spring lift assist

11. A cross back strap should be incorporated in the harness in which of the following circumstances?
 - a. You are prescribing for the bilateral below elbow amputee
 - b. The above-elbow amputee has difficulty achieving full terminal device operation with the prosthetic elbow fully flexed.
 - c. You are prescribing for a shoulder disarticulation amputee
 - d. The above elbow amputee complains of axillary
 - e. Both b and d
 - f. Both a and c

12. The lateral support strap of an above elbow harness should be attached to the humeral section of the above-elbow prosthesis:
 - a. Anterior to the acromion
 - b. On the anterior surface
 - c. Posterior to the acromion
 - d. On the posterior surface

13. In the Hosmer-Dorrance corporation's coding system for its terminal devices:
 - a. The higher the hook number, the larger the size
 - b. Hook numbers 3, 6, and 7 are for females and juveniles
 - c. An "X" in the hook designation means it's made of stainless steel
 - d. A "P" in the hook designation means it's made of aluminum alloy
 - e. None of the above

14. A shoulder saddie harness should be given most serious consideration for the:
 - a. Bilateral below elbow amputee
 - b. Bilateral above elbow amputee
 - c. Heavy duty user, regardless of amputation level or bilaterally
 - d. Female amputees
 - e. Juvenile amputees

15. It is usually necessary to incorporate an excursion amplifier in the harness system for the:
 - a. Bilateral below-elbow amputee
 - b. Unilateral above-elbow amputee
 - c. Shoulder disarticulation amputee
 - d. Elbow disarticulation amputee
 - e. Bilateral above-elbow amputee

16. Most upper-limb prosthetic sockets are of:
 - a. Double wall construction
 - b. Single wall construction
 - c. Open ended construction
 - d. Total contact construction
 - e. Both a and
 - f. Both b and c

17. The bilateral below-elbow amputee is best served by prescribing bilateral:
 - a. Wrist flexion units
 - b. Excursion amplifiers
 - c. Flexible hinges
 - d. Spring lift assists
 - e. Quick change units

18. The minimum acceptable control system efficiency for above-elbow prostheses has been determined to be:
 - a. 25%
 - b. 50%
 - c. 75%
 - d. 100%
 - e. None of the above

19. Control system efficiency for both below-elbow and above-elbow control systems is equal to the force at the:
 - a. Terminal device divided by the force at the hanger, multiplied by 100.
 - b. Hanger divided by force at the terminal device, multiplied by 100.
 - c. Hanger multiplied by 100 and divided by the force at the terminal device.
 - d. Terminal device multiplied by the force at the hanger, divided by 100.

20. When fit with flexible hinges, the amputee with the very long below-elbow level of amputation will be able to transmit approximately what percentage of his active residual supination and pronation to the terminal device?
 - a. 40%
 - b. 50%
 - c. 60%
 - d. 70%
 - e. 80%

21. For the person with the recently acquired upper-limb prosthesis, one of the most difficult things to learn is to:
 - a. Preposition the various prosthetic components for use
 - b. Master the various body control motions
 - c. Don and remove the prosthesis
 - d. Control the prosthetic components

22. The control attachment strap of the above-elbow harness should cross the amputee's back:
 - a. Between the spine and superior angle of the scapula
 - b. Between the spine and inferior angle of the scapula
 - c. Above the glenohumeral joint
 - d. At the acromion

23. The range of glenohumeral flexion required to fully flex the mechanical elbow unit of an above-elbow prosthesis should not exceed:
- 25°
 - 35°
 - 45°
 - 55°
 - 65°
24. Prepositioning for use by the above-elbow amputee may involve:
- Supinating or pronating the terminal device
 - Flexing the mechanical elbow joint
 - Locking the mechanical elbow unit
 - Rotating the turntable
 - None of the above
 - All of the above
25. The biceps cineplasty procedure would be most appropriate for use in which of the following circumstances?
- Female, below elbow amputees
 - Bilateral below elbow amputees
 - Selected, adult male unilateral below elbow amputees
 - Juvenile below elbow amputees
26. The figure-of-eight harness used by most above-elbow amputees has a stitched (sewn together) crossing point, which should be located:
- Below the spinous process of the 7th cervical
 - Slightly toward the non-amputated side
 - Over the vertebral border of the scapula on the non-amputated side
 - Over the axillary border of the scapula on the non-amputated side
 - Both a and b
 - Both b and c
 - Both a and d
27. The function of the cable housing on the below-elbow prosthesis serves to make it easier for the amputee to:
- Flex the elbow
 - Extend the elbow
 - Supinate the forearm
 - Pronate the forearm
 - None of the above
 - All of the above

28. The lateral support strap of the standard figure-of-eight harness used by most above-elbow amputees serves which of the following purposes?
- Resists downward displacement of the prosthetic socket on the residual limb
 - Resists upward displacement of the prosthetic socket on the residual limb
 - Resists external rotation of the prosthetic socket on the residual limb
 - Resists internal rotation of the prosthetic socket on the residual limb
 - Both a and c
 - Both b and d
29. The elbow flexion, terminal device control cable of the above elbow prostheses must pass anteriorly to the mechanical axis of the elbow joint. The closer this cable lies relative to the mechanical axis of the elbow, the:
- Less force the amputee must use to flex the elbow
 - Greater the force the amputee must use to flex the elbow
 - Greater the cable excursion required to flex the elbow
 - Less the cable excursion required to flex the elbow
 - Both b and d
 - Both a and c
30. With the elbow lock control cable incorporated into a chest strap type of harness for shoulder disarticulation amputees, the body control motion used to cycle the mechanical elbow unit is:
- Biscapular abduction
 - Contralateral scapular rotation
 - Biscapular adduction
 - Ipsilateral scapular rotation
 - Ipsilateral shoulder elevation
31. The disadvantage of using a split socket and step up hinges for the very short below-elbow amputee is:
- The amputee must use more force to flex the elbow
 - The hinges are fragile and subject to maintenance problems
 - The split socket tends to interfere with clothing
 - All of the above
32. The minimum acceptable control system efficiency for below-elbow prostheses is:
- 50%
 - 60%
 - 70%
 - 80%
 - 90%
33. In order for the amputee with the long below-elbow level of amputation to transmit maximum residual supination and pronation to the prosthesis and terminal device, the flexible hinges should be attached to the forearm as far:
- Distally as possible
 - Proximally as possible
 - Posteriorly as possible
 - Anteriorly as possible

34. The reaction point on the posterior surface of the humeral section of an above elbow prosthesis should be located:
- As close to the shoulder joint as possible
 - Below the distal end of the transected humerus
 - At, or very slightly above, the distal end of the transected humerus
 - Anywhere on the posterior surface of the humeral section
 - As close to the elbow joint as possible
35. Most unilateral below-elbow amputees with mid forearm levels of amputation, are best served by a prescription which calls for:
- A wrist flexion unit
 - A single wall socket
 - An APRL terminal device
 - Single pivot hinges
 - Polycentric hinges
 - Step up hinges
 - Flexible hinges
36. The prehension pattern used most frequently in performing activities of daily living is:
- Lateral prehension
 - Palmar prehension
 - Key prehension
 - Tip prehension
 - Spherical prehension
37. The above-elbow amputee uses ipsilateral shoulder flexion to flex the mechanical elbow unit of his prosthesis. If, when he uses shoulder flexion (with the mechanical elbow unlocked) the elbow remains extended, it is a sign that:
- There are an insufficient number of rubber bands on the hook
 - It takes more force to open the hook fingers than to flex the elbow
 - There are too many rubber bands on the hook
 - It takes less force to open the hook fingers than to flex the elbow
 - Both a and c
 - Both b and c
38. The body control motion used by the shoulder disarticulation amputee to flex the prosthetic elbow and to operate the terminal device is:
- Abduction of the contralateral shoulder joint
 - Elevation of the ipsilateral shoulder joint
 - Biscapular abduction
 - Biscapular adduction
39. The Krekenberg procedure has been used in the management:
- Bilateral above-elbow amputees
 - Unilateral above-elbow amputees
 - Blind, bilateral below-elbow amputees
 - Blind, elbow disarticulation amputees
 - Blind, shoulder disarticulation amputees

40. Generally, if a wrist flexion unit is prescribed for the bilateral amputee, the units(s) should be prescribed for use on:
- a. Both sides
 - b. The dominant residual limb
 - c. The non-dominant residual limb
 - d. None of the above